Course Syllabus

Introduction to Gas Tungsten Arc Welding

WLDG 1413

Title IX Statement

*Houston Community College is committed to cultivating an environment free from inappropriate conduct of a sexual or gender-based nature including sex discrimination, sexual assault, sexual harassment, and sexual violence.  Sex discrimination includes all forms of sexual and gender-based misconduct and violates an individual’s fundamental rights and personal dignity.  Title IX prohibits discrimination on the basis of sex-including pregnancy and parental status-in educational programs and activities.  If you require an accommodation due to pregnancy please contact an Abilities Services Counselor.  The Director of EEO/Compliance is designated as the Title IX Coordinator and Section 504 Coordinator.  All inquiries concerning HCC policies, compliance with applicable laws, statutes, and regulations (such as Title VI, Title IX, and Section 504), and complaints may be directed to:*

*David Cross*

*Director EEO/Compliance*

*Office of Institutional Equity & Diversity*

*3100 Main*

*(713) 718-8271*

*Houston, TX 77266-7517 or Houston, TX 77266-7517 or* [*Institutional.Equity@hccs.edu*](mailto:Institutional.Equity@hccs.edu)

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| **Semester with Course Reference Number (CRN)** | Fall 2018 - 14783 |
| **Instructor contact information (phone number and email address)** | [Lloyd.Winfield@hcc.edu](mailto:Lloyd.Winfield@hcc.edu) |
| **Office Location and Hours Central, JBW, welding lab** |  |
| **Course Location/Times Eastside, WFII rm#104** |  |
| **Course Semester Credit Hours (SCH) (lecture, lab) If applicable** | |  |  |  | | --- | --- | --- | | Credit Hours | 4.00 |  | | Lecture Hours | 2.00 |  | | Laboratory Hours | 6.00 |  | |
| **Total Course Contact Hours** | 96 |
| **Continuing Education Units (CEU): if applicable** | N/A |
| **Course Length (number of weeks)** | 16 |
| **Type of Instruction** | Lab/Lecture |
| **Course Description:** | An introduction to the principles of gas tungsten arc welding (GTAW), setup/use of GTAW equipment, and safe use of tools and equipment. Welding instruction in various positions on joint designs |
| **Course Prerequisite(s)** | WLDG 1407, WLDG 1428, |
| **Academic Discipline/CTE Program Learning Outcomes** | * Demonstrate general shop safety * Setup oxy-fuel equipment * Setup arc welding equipment * Apply procedures for operating arc welding equipment |
| **Course Student Learning Outcomes (SLO): 4 to 7** | 1. Explain general shop safety procedures 2. Describe operation of Oxy-fuel equipment 3. Describe Gas Tungsten Arc Welding equipment (GTAW) 4. Setup Gas Tungsten Arc Welding equipment |
| **Learning Objectives (Numbering system should be linked to SLO - e.g., 1.1, 1.2, 1.3, etc.)** | 1. **Explain general shop safety procedures**    1. Describe appropriate personal protective equipment.    2. Describe the special safety precautions associated with the handling and use of cylinders and oxy-fuel cutting equipment.    3. Evaluate the need for proper ventilation in work area near fuel cutting operations.   2. **Describe operation of oxy-fuel equipment**  2.1 Describe the properties of oxygen and acetylene cylinders.  2.2 Describe the acetylene cylinders valve and safety plugs.  2.3 Explain that cylinder valves should be cover with a cap when not in use.  2.4 Explain that a cylinder must be secured before its protective cap is removed.  3. **Describe Gas Tungsten Arc Welding equipment**  3.1 Describe general safety procedures for GTAW.  3.2 Identify GTAW equipment.  3.3 Explain how to set up and use GTAW equipment.  3.4 Explain how to clean GTAW welds  4. **Setup Gas Tungsten Arc Welding equipment**  4.1 Explain Gas Tungsten Arc Welding GTAW safety.  4.2 Identify and explain the function of GTAW equipment.  4.3 Identify and explain the function of GTAW filler metals.  4.4 Identify and explain the function of GTAW shielding gases.  4.5 Set up GTAW equipment. |
| **Course Calendar** | Current Catalog (CAT 2017) |
| **Instructional Methods** | Lecture/Lab |
| **Student Assignments** | **Explain general shop safety procedures**  Textbook Reading as assigned by instructor  Chapter Review /Questions – Test your knowledge  Weekly Quiz  **Describe operation of Oxy-fuel equipment**  Textbook Reading as assigned by instructor  Chapter Review /Questions – Test your knowledge  Weekly Quiz  **Describe Gas Tungsten Arc Welding equipment (GTAW))**  Textbook Reading as assigned by instructor  Lab assignment/class project/video  Weekly Quiz  **Setup Gas Tungsten Arc Welding equipment**  Textbook Reading as assigned by instructor  Lab assignment/class project video  Weekly Quiz |
| |  |  | | --- | --- | | **Student Assessments** |  | | |  | | --- | | Written Test: Students must score 70% or higher on mid-term and final exams.  Performance Testing: Students must be able to perform setting up, igniting, adjusting, and shutting down oxy fuel equipment. Students must be able to perform cutting a shape from thin and thick steel. Set up arc welding equipment. | |
| **Instructor's Requirements** | N/A |
| **Program/Discipline Requirements: If applicable** | N/A |
| **HCC Grading Scale** | |  |  |  | | --- | --- | --- | | A (90-100/ Excellent) |  | 4 points per semester hour | | B (80-89/Good) |  | 3 points per semester hour | | C (70-79/Fair) |  | 2 points per semester hour | | D (60-69/Passing \*) |  | 1 points per semester hour |  | | F (Failing) |  | 0 points per semester hour |  | | FX (Failure due to non-attendance ) |  | 0 points per semester hour |  | | IP ( In Progress) |  | 0 points per semester hour |  | | W (Withdrawn) |  | 0 points per semester hour |  | | I ( Incomplete) |  | 0 points per semester hour |  |   AUD (Audit)  IP (In Progress) is given only in certain developmental courses. The student must re-enroll to receive credit.  COM (Completed) is given in non-credit and continuing education courses. To compute grade point average (GPA), divide the total grade points by the total number of semester hours attempted. The grades "IP," "COM" and "I" do not affect GPA.  **Instructor Grading Criteria**   |  | | --- | | **Student Evaluation Policies/Grading Scales:** | | NCCER MODULE TEST 29207 50% | | ATTENDANCE 30% | | CAREER READINESS (RESUME) 20% | | Total 100% | |
| **Instructional Materials** | N/A |
| **HCC Policy Statement:** | |
| **Access Student Services Policies on their Web site:** | <http://hccs.edu/student-rights> |
| **Distance Education and/or Continuing Education Policies** | |
| **Access DE Policies on their Web site:** | <http://de.hccs.edu/Distance_Ed/DE_Home/faculty_resources/PDFs/DE_Syllabus.pdf> |
| **Access CE Policies on their Web site:** | <http://hccs.edu/CE-student-guidelines>  **COURSE POLICIES**  **Attendance**  Students are expected to attend classes regularly, and to be on time for every class period. Students can be dropped from a class due to excessive absences. Excessive tardiness may be considered absences. Students are responsible for subjects, assignments, and projects covered during their absences. Consult the ***Student Handbook*** for more details or visit http://www.hccs.edu/hccs/current-students.  **Academic Honesty**  Scholastic dishonesty is treated with the utmost seriousness by the instructor and the College. Academic dishonesty includes, but it is not limited to the willful attempt to misrepresent one’s work, cheat, plagiarize, or impede other students’ scholastic progress. Consult the ***Student Handbook*** for more details.  **Students with Disabilities**  The Disability Support Services Office (DSSO) assists students with physical, learning, or emotional disabilities in developing independence and self-reliance. Students with Disabilities are urged to contact the DSSO at least 30 to 60 days prior to the first day of class. The goal is to ensure that students with disabilities get off to a good start and have the support necessary for them to succeed. The DSSO are committed to compliance with the Americans with Disabilities Act (ADA) and Rehabilitation Act of 1973 (section 504).  Student can contact by phone at 713.718.6164 - TTY 713.718.6335. Fax 713.718.1468  **Course Repeater Policy:**  Beginning in the Fall 2006, students who repeat a course for a third or more times will face significant tuition/fee increases at HCC and other Texas public colleges and universities. Please ask your instructor and/or counselor about opportunities for tutoring/other assistance prior to considering course withdrawal or if you are not receiving passing grades.  **Cell Phones**  All cell phones must be muted, set to vibrate, or turned off during class. Cell phone activity during class is deemed disruptive to the academic process and will not be tolerated. If you need to make or receive an ***Emergency Call***, please leave the classroom.  **Calculators**  If the course allows the use of a calculator during class, lab projects, and exams, the student is responsible to bring his/her calculator. Cell phones are not calculators, and are not allowed to be used for that purpose during class, tests, or exams.  **Student ID**  Students are required to obtain a Student ID. For additional information, consult the ***Student Handbook***.  **Parking Rules and Regulations** Students are required to follow HCC’s regulations regarding parking and permits. For additional information, visit <http://www.hccs.edu/hccs/about-hcc/police/parking/parking-rules-and-regulations>  **Books, Tools and Supplies**  Students are required to purchase and bring to class the required textbooks, tools, notebooks, supplies, and writing instruments as required by the instructor.  **Dress Code**  This is a workforce environment, students must dress accordingly.  **Classroom and Laboratory Conduct**  Proper behavior is expected in all classes and laboratories. Foul language and horseplay are not allowed. Making or receiving cell phone calls during class are not allowed. Sleeping in class is not allowed. If an emergency exists, tardiness or absence, inform the instructor by calling the number at the top of page.  **Course Withdrawal**  It is the responsibility of the student to officially withdraw from a course before the official withdrawal deadline. A student who does not withdraw from a course by the deadline will receive an “FX” as the final grade. Also, note that under Section 51.907 of the Texas Education Code, an institution of higher education may not allow a student to drop more than sic coursed per semester.  **COURSE TEXT:**  Contren Learning Series NCCER Level 2: Prentice Hall Craft Training, Revised 2010  **SUPPLY LIST:**  Welding Hood with flip-up visor, Welding Gloves (leather), Welding Sleeves and Caper or Welding Jacket, Chipper Hammer, Wire Brush, Safety Glasses, Welder Cloth Cap, Steel Toed Lather Shoes, Burning Goggles, Tip Cleaner (for cutting torch tips), Adjustable Wrench 12:, Grinder 4”, Extension Cord 12”, Tape Measure, Small Lock, Flint Stringer, Notebook or Plain Paper, Pen/#2 Pencils, Channel Lock Pliers (for picking up hot metal) Mig Parts – Nozzle, Diffuser Tips, Tig Parts-Gas Diffuser, Tig Cups, Tungsten |

**COURSE OUTLINE**

**WEEK # 1: COURSE RULES AND ORIENTATION**

* Introduction
* Purpose of the course
* Overview of course syllabus
* Course policies
* Required materials, textbook(s), supplies, and resources (if applicable)
* Disability Support Services
* Registration, schedules, receipts, and student ID
* Importance of updating and maintaining student data (Name, Address, ID #, phone numbers, emails)
* Parking rules and regulations
* Classroom and laboratory safety
* Course withdrawal, ***Official Day of Record,*** *and last day for withdrawal*
* Course tests, quizzes, exams, and assignments
* Course grading policies
* Instructor information
* Campus orientation

**WEEK #2**

* General shop safety
* Set up and demonstrate safety procedures
* Instructional Safety Test

**WEEK #3**

• Explain Gas Tungsten Arc Welding Safety

• Identify and explain the function of GTAW

• Set up GTAW equipment

• Module 29207-15

• Weld Quality

**WEEK #4**

* Pad Welding
* Overlapping Beads

**WEEK #5**

* Position 1F

**WEEK #6**

* Position 1F

**WEEK #7**

* Position 2F

**WEEK #8**

* Position 2F
* Mid Term NCCER MODULE 29207 – 15
* Career Readiness (Resume)

**WEEK #9**

* Make welds in 3F Position

**WEEK #10**

* Make welds in 3F Position

**WEEK #11**

* Make welds in 4F Position

**WEEK #12**

* Make welds in 4F Position

**WEEK #13**

* Review and Performance in all position

**WEEK #14**

* Review and Performance in all position

**WEEK #15**

* Review and Performance in all position

**WEEK #16**

* Final NCCER MODULE 29207-15
* Final Copy of Resume